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GEOGRAPHY AND TRAVELS.<sup>1</sup>

THE AMAZON.—The U. S. corvette *Enterprise*, Commander Thomas O. Selfridge, arrived off Para, Brazil, on the 24th of May, having been ordered to make a survey of the Amazon river as far as Manaos, and the Madeira as far as San Antonio. From a correspondent of the *New York Herald* we learn that the *Enterprise* started up the river on the 3d of June. Passing the mouth of the Tocantins she entered the first narrow canal. These natural canals or *furos* resemble the artificial channel made by Capt. Eads at the mouth of the Mississippi—the heavy growth of aquatic plants and the thick interlacing of the roots of the trees forming in these narrow passages barriers similar to the mattresses used by him. A frigate may pass through these natural jetties of the Amazon without fear, for the rush of water keeps the way clear.

Two serious accidents to the machinery caused considerable delay, but the survey had been conducted successfully at the rate of about sixty miles a day up to the date of this letter, on June 15th, off Serpa, thirty miles below the mouth of the Madeira. No triangulation is undertaken, but simply a track chart is to be made. The points noted are the depths, the profile of the shore, the position of the islands, the courses steered, the bearings of prominent points, the fixings of landmarks, the strength of the current, the character of the banks, the compass deviations, the meteorological changes, the barometric altitudes and the latitude and longitude of the towns, villages, bars, shoals and rocks of the river.

A correspondent of the *New York World* gives an interesting account of the Island of Marajò, the largest in South America, at the mouth of the Amazon. Its area is nearly that of the State of New York. This immense tract, formed by alluvial deposits, is a vast plain, without hill or valley or springs of water. The island is divided diagonally into two sections nearly equal in extent, the south-western being covered by forest, and the north-western being an extensive prairie with occasional groups of trees. The former section is of great fertility and yields a great variety of valuable timber, medicinal plants and a great number of India rubber trees (*Syphonia elastica*). The prairie is devoted to cattle raising, and their number is estimated at 250,000. In many places the land is below the level of the river bed, and during the rainy season these tracts are almost entirely submerged, and overflowing fill the lakes and rivers of the island, of which Lake Arary and the river of the same name are the most important. With the exception of some plantations of sugar cane and cocoa, the raising of cattle on the prairies, and the manufacture of the India rubber in the forest region are the only industries of this extensive territory. The population is supposed to be about 36,000.

Edited by ELLIS H. YARNALL, Philadelphia.

FLUVIAL INTERSECTIONS OF MOUNTAIN RANGES.—In an article upon the Himalayan System, included in the Proceedings of the Berlin Geographical Society, Herr Von Richthofen remarks (as translated in the July *Geographical Magazine*): In the history of orography three styles may be distinguished. As hydrography generally precedes topography, so water-partings come to be hypothetically regarded as mountain ranges; those between the principal rivers being considered as ranges of the first degree, and those between minor streams as ranges of lower degree. By the knowledge of the elevations and depressions of a country we arrive at the second stage and find that the mountain ranges do not always coincide with the water-partings. Some of the ranges are found to be intersected by rivers and the most general features of the structure become apparent. A third stage is reached when we have obtained from the geological composition not only a scientific knowledge of the main features of the formation, but also understand the laws of the arrangement of the secondary features. The transition from the first to the second stage can be seen most distinctly in those mountain systems which have only in our own time become known, as, for instance, in the one of the Tian-Shan and the Pamir Mountains, where in the unexplored districts, the water-parting system still regulates the drawing of our maps; whilst, in all districts which have been surveyed more accurately, range after range appears distinctly with frequent fluvial intersections.

A continuous function of water-parting is not the necessary mark of a mountain range. In the case of the Himalayas the principle adopted long ago from a purely geographical point of view by geologists, but rarely admitted by geographers, is triumphantly established, *i. e.*, that mountain ranges are to be considered independently of interruptions and intersections by river valleys and that the latter are only to be regarded as solutions of continuity of a secondary importance.

GEOGRAPHICAL NEWS.—The U. S. Coast Survey steamer *Blake* returned about the 1st of July, from dredging operations in the Gulf of Mexico. Capt. Patterson of the Coast Survey, states that the extensive and accurate soundings of the Gulf, taken by the improved scientific methods on this voyage, do not tend to confirm the belief, long held, that the equatorial current, after rushing from the Caribbean Sea through the channel formed by the West Indian islands and the northward projection of Yucatan makes the whole tortuous circle of the Gulf close by the shores of Central America, Mexico and the southern coast of the United States, before emerging into the Atlantic, between the point of Florida and the Bahamas. The observations tend rather to prove that the force of the incoming equatorial stream extends itself in one direction against the mass of the Gulf long before it reaches the Texas coast and then turns directly towards and re-issues into

the ocean.—Col. Prejevalsky, an account of whose last journey to the Lob-Nor was given in the *NATURALIST* for August, writes from St. Petersburg (London *Academy*, June 29th), that he is obliged, on account of his health, to take a complete rest until December next, when he expects to start for Port Zaizan, whence he will depart for Hami and Sha-chan, en route for Tibet. Upon his return, probably at the end of 1880, he will set to work on the materials he has collected.

Dr. Behn, in his *Monatsbericht* (July *Mittheilungen*), states that included in his collections is the skin of a species of wild horse named Tarpan, which dwells in the sandy deserts of Dsungaria, together with (*neben*) the Kulan (*Asinus kiang*) and the Djigetai (*Asinus hemionus*). This specimen was slain by the Kirgise at Gutchen.—The London *Athenæum* is informed that the recent telegraphic determinations of longitude executed by the Indian Survey Department have resulted in the geodetical connection of Madras Observatory, the pivot on which the whole fabric of Indian triangulation rests, with Aden and Suez, and hence with Greenwich. The result of this measurement is to establish a new value for Madras Observatory (80° 14' 51" E. of Greenwich), which will thus affect all Indian meridians and which will have, theoretically, the effect of moving India 2000 feet or so further from England. It is hoped to establish further geodetical connection with Australia, and ultimately that San Francisco on the one side, and the Russian stations on the Pacific on the other, may be brought into connection with Europe.—Dr. Van der Horck, who delivered an address before the American Geographical Society, in 1876, on the results of an expedition made by him to Lapland, 1874-5, has now gone to Hong Kong on a mission entrusted to him by the German government and the Berlin Geographical Society. He is to organize an expedition to traverse the whole of the Eastern Asiatic coast, the islands especially; then crossing at Behring's Straits to follow down the western coast of America to Oregon. The objects of his journey are scientific investigations, coast surveys, deep sea dredgings, geological, zoölogical and botanical researches, and, above all, anthropological studies concerning the migration of men from Asia to America, and to see if remains of an ancient migratory people cannot be found on the isolated groups of islands of these regions. The means at the disposal of the expedition will be liberal, and the time unlimited, and it is expected that the work of the expedition will consume three or four years. (*New York Tribune*).—Last week we spoke of the generosity of the United States Government in the distribution of the publication of their admirable surveys. We regret to see, from a speech in the House of Representatives by the Hon. O. R. Singleton, that the usefulness of Dr. Hayden's surveys threatens to be seriously crippled from want of funds. The appropriation for this survey in 1867, was

only \$5,000, which in 1873 had been raised to \$95,000. In 1876 this was reduced by \$30,000, and again, in 1877, by \$20,000, leaving the appropriation at only \$45,000. The largest sum is what is actually needed that the survey may be carried on with efficiency, and to reduce it is quite unworthy of a nation so advanced and liberal as the United States, and is really the worst possible economy. The additions which have been made to science by Dr. Hayden's survey have been immense and of the highest importance, and its economic value to the country can be no less great. The mere list of the many admirable publications of the survey is sufficient to prove that the money has been well spent; and we trust that the United States Government and Congress will be able to rise above all party feeling, and prove to the world that they have the best interests of the country and the interests of scientific knowledge at heart by restoring the appropriation to at least its old amount. Mr. Singleton truly says that not a small item in favor of these surveys is the check they place on mining and land swindles.—*Nature*.

OBITUARY.—Admiral Sir George Back, F.R.S., deceased on the 23d of June, aged eighty-one years. He took part in five Arctic expeditions, the most important of which were the "Franklin Second Expedition," in 1825-27, "The Arctic Land Expedition to the mouth of the Great Fish river and along the shores of the Arctic ocean," in 1833-35, and "The Expedition of H.M.S. *Terror*" in 1836-37.

John A. MacGahan died at Constantinople, the 9th of June, aged thirty-two years. He will hereafter, be remembered for his wonderful journey to Khiva, in 1873, as related in his admirable work, "Campaigning on the Oxus." He also wrote an account, "Under the Northern Lights," of his voyage on the *Pandora*, with Capt. Allen Young, up the Peel strait, in 1875.

Mr. T. T. Cooper, British resident at Bhamo was assassinated at that place on the 13th of May. He was forty-one years of age, and was the author of "Travels by a Pioneer of Commerce," in which he related the details of a remarkable journey from Shanghai, through China and the border county of Tibet, to Yunnan.

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## SCIENTIFIC NEWS.

— The sixth volume of the Proceedings of the California Academy of Sciences for 1875, has just been received, and contains a variety of interesting papers on the geology, insects, shells and plants of the Pacific slope. Part I, Vol. vii, just published, forms a *brochure* of 174 pages, and contains a number of papers on Pacific coast Lepidoptera, by Mr. Henry Edwards, two articles on Crustacea, by Mr. W. G. W. Harford, and numerous